

NIEHS Global Environmental Health and Sustainable Development Projects

Human Developmental Toxicity of Metal Mixture Exposure From E-Waste Recycling (RC4ES019755)

Aimin Chen, University of Cincinnati | aimin.chen@uc.edu

This collaborative project with Shantou University Medical College in China is investigating the potential effects of high metal mixture exposures in pregnant women and their fetuses from primitive e-waste recycling including adverse pregnancy outcomes, thyroid hormone disruption, and deficits in infant neurodevelopment.

Arsenic Exposure and Birth Outcomes in Bangladesh (R01ES015533)

David Christiani, Harvard University | dchris@hsph.harvard.edu

These human studies look to investigate the relationship between maternal arsenic exposure and arsenic concentrations in infants, to study birth outcomes in an arsenic-endemic region, and to assess biomarkers of arsenic exposure.

International Training Program in Environmental and Occupational Health (D43ES000640)

Luz Claudio, New York University | luz.claudio@mssm.edu

For 15 years, this program, centered at the Mount Sinai School of Medicine, has trained individual scientists from Brazil, Chile and Mexico in key disciplines of environmental and occupational health research, and building a network of skilled environmental and occupational health scientists for the Latin American region who can address cross-cutting international environmental health issues.

Factors Modifying the Toxicity of Methylmercury in a Fish-eating Population (R01ES010219)

Phillip W. Davidson, University of Rochester | philip.davidson@urmc.rochester.edu

The Seychelles Child Development and Nutrition Study examined the hypothesis that maternal nutritional and dietary status during pregnancy could modify the toxicity of methylmercury when exposure stems from consumption of a diet high in fish.

Epidemiology of Immunotoxicant Exposures in Children (R01ES012199)

Phillipe A. Grandjean, Harvard University | pgrand@hsph.harvard.edu

In this project, more than 600 children from a unique fishing population in the Faroe Islands are being followed as part of a study that showed that vaccine responses can be used to model immunotoxicity related to PCB exposure. Current efforts are looking at sustained serum concentrations of vaccine antibodies through adolescence.

Molecular Biomarkers for Environmental Toxicants (P01ES006052)

John Groopman, Johns Hopkins University | jgroopma@jhsp.edu

This long-standing collaborative program established the link between environmental exposure to the mold, aflatoxin, combined with the hepatitis virus for increased risk of liver cancer. A current translational research project under this program project grant is to develop biomarkers of exposure to mycotoxins in children in South Africa, and in turn working to develop an intervention method to reduce exposure to the mycotoxins in their subsistence maize farming communities.

Environmental Contaminants and School-age Development (R01ES007902)

Joseph L. Jacobson, Wayne State University | joseph.jacobson@wayne.edu

This project looks at developmental effects on Inuit children in Canada and Greenland exposed prenatally to PCBs and methylmercury from maternal consumption of fish and sea mammals that bioaccumulate the metals.

RSV Infection and Disease Progression in Children in Argentina

Steven Kleeberger, NIEHS | kleeber1@niehs.nih.gov

This joint project between NIEHS, Johns Hopkins University, and the INFANT Foundation in Buenos Aires, Argentina is studying the role of innate immunity and antioxidant enzyme genes in respiratory syncytial virus (RSV) infection and disease progression in infants and children.





Lead Exposure, Externalizing Behavior and Neurobiological Mediating Factors (R01ES018858)

Jianghong Liu, University of Pennsylvania | jhliu@upenn.edu

This project is investigating the relationships between lead exposure and neurocognition, psychosocial behaviors (aggression, ADHD, oppositional disorder), IQ, and other endpoints in a cohort of more than 1,600 preadolescent children in Jintan, China.

Mexico City Childhood Asthma Study

Stephanie London, NIEHS | london2@niehs.nih.gov

This project is a collaboration with the National Institute of Public Health in Mexico to investigate the effects of lifetime exposure to high concentrations of ozone on 600 childhood allergic asthmatics and their parents.

Study of DDT and Loss of Clinically Recognized Pregnancies in South Africa

Matt Longnecker, NIEHS | longnec1@niehs.nih.gov

This is a prospective study of early pregnancy loss (miscarriage and stillbirth) in relation to DDT exposure of women from six villages in Limpopo Province, South Africa. DDT is currently in use for malaria control in three of them.

Air Pollution, Inflammation, and Preterm Birth: A Mechanistic Study in Mexico City (R01ES016932)

Marie Sylvia O'Neill, University of Michigan | marieo@umich.edu

Preterm birth is the leading cause of death and is associated with long-term health consequences for surviving infants. This work is studying the relationship between exposure to air pollution and preterm birth in 800 pregnant women in Mexico City.

Chronic Respiratory Effects of Early Life PM Exposure (R01ES010178-09)

Kirk Smith, University of California, Berkeley | kirksmith@berkeley.edu

This project in rural Guatemala is addressing the effects of exposure during infancy to particulate matter in biomass smoke from cookstoves on the incidence of respiratory symptoms, growth of lung function, development of allergic sensitization to inhaled antigens, airway responsiveness, and somatic growth later in childhood.

Toxic Substances in the Environment (P42ES004705)

Martyn T. Smith, University of California, Berkeley | martynts@berkeley.edu

This program investigates the environmental health effects including skin lesions, and lung and kidney damage from exposure to arsenic in drinking water in West Bengal, India.

Cookstove Replacement for Prevention of ARI and Low Birth Weight in Nepal (R01ES015558)

James Tielsch, Johns Hopkins University | jtielsch@jhsp.edu

This research program aims to determine which interventions are most effective in reducing the burden of death and illness among women and children in high-risk populations in southern Nepal, where acute respiratory illness is a leading cause of death in young children.

Environmental and Genetic Causes of Birth Defects

Allen Wilcox, NIEHS | wilcox@niehs.nih.gov

This program is a population-based case-control study of facial clefts in Norway, which has one of the highest rates of cleft lip and palate in the world. Facial clefts are one of the most common birth defects, affecting 2 out of every thousand babies. Though the causes are unknown, both genetic and environmental factors are thought to contribute to cleft palate.

Metal Mixtures and Neurodevelopment (R01ES014930)

Robert Wright, Harvard University | robert.wright@channing.harvard.edu

This collaboration with the National Institute of Public Health in Mexico investigates environmental exposures to combinations of metals (lead, arsenic, manganese) to understand and help predict toxic effects on neurodevelopment.

Responses to Drastic Changes in Air Pollution: Reversibility and Susceptibility (R01ES015864)

Junfeng Zhang, University of Medicine and Dentistry of New Jersey and Rutgers University

This real-world study, conducted during the drastic air pollution changes that accompanied the 2008 Olympics in Beijing, China, investigated several prominently hypothesized mechanisms of particulate matter effects. Results provide invaluable data to improve the assessment of public health impacts of air pollution reductions.